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PRESENT CLAIMS

1. (Currently Amended) A thermoelectric cooler comprising:  
a multistage thermoelectric cooler, each stage of said multistage cooler arranged with a Peltier device interposed between an intermediate heat sink and an intermediate cold sink, said Peltier device configured to exhibit a voltage drop, each stage having a first surface and a second surface and comprising n-type and p-type thermoelectric materials bonded to each other in a direction substantially normal to the plane of the first surface or the second surface.
2. (Original) The thermoelectric cooler of claim 1 whereby said multistage thermoelectric cooler effects heat transfer from a cold sink to a hot sink.
3. (Original) The thermoelectric cooler of claim 1 wherein said Peltier device is lead telluride.
4. (Original) The thermoelectric cooler of claim 1 wherein said Peltier device is bismuth telluride.
5. (Original) The thermoelectric cooler of claim 1 wherein said intermediate heat sink of stage n is an intermediate cold sink of stage n-1.
6. (Original) The thermoelectric cooler of claim 1 whereby electrons are transferred from said intermediate cold sink to said intermediate hot sink.

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7. (Original) The thermoelectric cooler of claim 1 wherein said Peltier device is constructed of n-type semiconductor material.
8. (Original) The thermoelectric cooler of claim 1 wherein said Peltier device is constructed of p-type semiconductor material.
9. (Original) The thermoelectric cooler of claim 1 wherein said cooler is comprised of alternating n-type and p-type semiconductor material at each stage of said multistage thermoelectric cooler
10. (Original) A thermoelectric cooler array comprised of the thermoelectric cooler of claim 1 arranged in an  $M \times N$  array.
11. (Canceled)
12. (Withdrawn) A method of manufacturing a multistage thermoelectric cooler, said method comprising the steps of:
  - creating an n-type thermoelectric substrate;
  - creating a p-type thermoelectric substrate;
  - selectively bonding said n-type thermoelectric substrate with said p-type thermoelectric substrate horizontally; and
  - slicing vertically said bonded substrate.

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13. (Withdrawn) The method of claim 12, said method further comprising the step of:
- stacking said vertically sliced bonded substrate; and
- vertically slicing said stacked bonded substrate in an orthogonal direction to said first vertical slicing step.
14. (Withdrawn) The method of claim 12 wherein said n-type substrate is lead telluride.
15. (Withdrawn) The method of claim 12 wherein said p-type substrate is lead telluride.
16. (Withdrawn) The method of claim 12 wherein said n-type substrate is bismuth telluride.
17. (Withdrawn) The method of claim 12 wherein said p-type substrate is bismuth telluride.
18. (Withdrawn) The method of claim 12 wherein said steps are repeated for each specified layer of said multilayer thermoelectric cooler.